In the Claims

1.-12. (Canceled)

13. (Previously Presented) A method for identifying substances having anesthetic properties, wherein said substances produce a reversible state of unconsciousness with amnesia and analgesia in a mammal upon inhalation comprising:

(a) contacting said substances with TREK-1 having SEQ ID No. 2 or 4, or TASK having SEQ ID. No. 5 and variants thereof that are at least 95% identical to SEQ ID. No. 2, 4 or 5, wherein said TREK-1 or TASK are mammalian potassium transport proteins, and wherein said TREK-1 or TASK protein exhibits outward-going potassium rectification; and

(b) determining the potassium transport activity of said TREK-1 or TASK protein, wherein an activation of potassium transport is indicative of said substance having anesthetic properties.

14. (Original) The method of claim 13, wherein said potassium transport protein is TASK

15. (Original) The method of claim 13, wherein said potassium transport protein is TREK-1.

16. (Original) The method of claim 15, wherein said TREK-1 comprises the amino acid sequence selected from the group consisting of SEQ ID NO:2 and SEQ ID NO:4.

17. (Canceled)

18. (Currently Amended) A method for identifying substances having anesthetic properties, wherein said substances produce a reversible state of unconsciousness with concurrent amnesia and analgesia in a mammal upon inhalation comprising:

(a) contacting said substance with COS cells, wherein said COS cells are transfected with a nucleotide vector comprising a nucleic acid molecure encoding a potassium channel~~, TREK-1,~~ having two pore domains and four transmembrane segments, the potassium channel having an amino acid sequence selected from the group consisting of SEQ ID NO: 2, SEQ ID NO: 4 and an amino acid sequence that is at least ninety percent (90%) identical to SEQ ID NO: 2 or SEQ ID NO: 4, wherein said COS cells transiently express said ~~TREK-1~~ potassium channel on a surface of said COS cells, and wherein said ~~TREK-1~~ potassium channel exhibits outward-going potassium rectification, and wherein said ~~TREK-1~~ potassium channel is selectively activated by chloroform, diethyl ether, halothane, and isoflurane; and

(b) determining the potassium transport activity of said TREK-1 wherein an activation of potassium transport is indicative of said substance having said anesthetic properties.

19. (Previously Presented) A method for identifying substances having anesthetic properties, wherein said substances produce a reversible state of unconsciousness with concurrent amnesia and analgesia in a mammal upon inhalation comprising:

(a) contacting said substance with COS cells, wherein said COS cells are transfected with a nucleotide vector comprising a nucleic acid molecule encoding an amino acid sequence set forth in SEQ ID NO: 2, wherein said COS cells transiently express said amino acid sequence on a surface of said COS cells, and wherein said amino acid sequence exhibits outward-going potassium rectification; and

(b) detemining the potassium transport activity of said amino acid sequence wherein an activation of potassium transport is indicative of said substance having said anesthetic properties.

20. (Previously Presented) A method for identifying substances having anesthetic properties, wherein said substances produce a reversible state of unconsciousness with concurrent amnesia and analgesia in a mammal upon inhalation comprising:

(a) contacting said substance with COS cells, wherein said COS cells are transfected with a nucleotide vector comprising a nucleic acid molecule encoding an amino acid sequence set forth in SEQ ID NO: 4, wherein said COS cells transiently express said amino acid sequence on a surface of said COS cells, and wherein said amino acid sequence exhibits outward-going potassium rectification; and

(b) determining the potassium transport activity of said amino acid sequence wherein an activation of potassium transport is indicative of said substance having said anesthetic properties.

21. (Canceled)

22. (Currently Amended) A method for identifying substances havign anesthetic properties, wherein said substances produce a reversible state of unconsciousness with concurrent amnesia and analgesia in a mammal upon inhalation comprising:

(a) contacting said substance with transfected cells, wherein said transfected cells are tarnsfected with a nucleotide vector comprising a nucleic acid molecule encoding a potassium channel, TASK, having ~~two pore domains and four transmembrane segments~~ an amino acid sequence according to SEQ ID NO: 5 or an amino acid sequence that is at least ninety percent

(90%) identical to SEQ ID NO: 5, wherein said transfected cells transiently express said TASK on a surface of said transfected cells, and wherein said TASK exhibits outward-going potassium rectification, and wherein said TASK is selectively activated by halothane, and isoflurane; and

(b) determining the potassium transport activity of said TASK wherein an activation of potassium transport is indicative of said substance having said anesthetic properties.

23. (Currently Amended) A method for identifying substances having anesthetic properties, wherein said substances produce a reversible state of unconsciousness with concurrent amnesia and analgesia in a mammal upon inhalation comprising:

(a) contacting said substance with transfected cells, witherein said transfected cells are transfected with a nucleotide vector comprising a nucleic acid molecule encoding ~~(SEQ ID NO:5)~~ SEQ ID NO: 5, wherein said transfected cells transiently express amino acid sequence on a surface of said transfected cells, and wherein said amnio acid sequence exhibits outward-going potassium rectification; and

(b) determining the potassium transport activity of said amino acid sequence wherein an activation of potassium transport is indicative of said substance having said anesthetic properties.

24. (Canceled)

25. (Original) The method of claim 22, wherein said transfected cells are selected from the group consisting of COS cells, HELA cells, *Spodoptera* cells, *Xenopus* oocytes, embryonic kidney cells, Chinese hamster ovary cells, and fibroblasts.